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United States Department of Agriculture | Forest Service | RO

Reply: 3400 Date:

Subject: Assistance trip to evaluate western hemlock looper defoliation

To: Darrington and Mt. Baker District Rangers through Forest Supervisor, Mt. Baker-Snoqualmie National Forest

On September 22 and 23 I visited the Darrington and Mt. Baker Ranger Districts to look at some of the areas that have experienced defoliation caused by western hemlock looper (Lambdina fiscellaria lugubrosa) and to look at some campsites near Baker Lake that have had some Douglas-fir beetle (Dendroctonus pseudotsugae) activity since a blowdown event in the winter of 1990/1991. I was accompanied on this trip by Barbara Busse, Lance Raff and Sue Sherman-Biery.

Western Hemlock Looper

September 22

We first drove over Barlow Pass on Forest Road (FR) 20 to an area along South Fork Stillaguamish River between Buck Creek and Silver Gulch. This area had been mapped during the Forest Pest Management Aerial Detection Survey as having light defoliation caused by western hemlock looper. There is little evidence of defoliation in this area from ground level. We drove up Coal Creek Road (FR 4060) to get a view overlooking the river valley. Defoliation was not evident from this viewpoint either. There were lots of cones in Douglas-fir and western hemlock. I surmised that either (1) the discoloration caused by the presence of cones may have been interpreted as defoliation during the aerial survey or (2) there is defoliation in the tops of the trees that was visible at the time of aerial survey and is not visible now.

We then went back over Barlow Pass along FR 20 to the start of Beaver Lake Trail. The understory hemlock were heavily defoliated in this area, with the overstory hemlock showing evidence of defoliation with some bare tops but without defoliation of whole trees. In addition, the understory vine maple, alder, and salmonberry foliage had been fed on by the loopers. Flying looper moths were easily seen as we drove along. After following FR 22 we drove up FR 24 to a viewpoint of the the Sauk River valley below. From there, one pocket of heavily defoliated trees was visible across the valley. Defoliation on surrounding trees and others in the valley had very little apparent defoliation.

We then stopped at Clear Creek Campground several miles southeast of Darrington. This is the second year that defoliation has been observed in the campground. I observed some dead intermediate-sized (50 to 70 feet tall) hemlocks along the banks of Clear Creek across the road from the campground. Adjacent overstory hemlocks have evidence of defoliation and some apparent topkill, but no mortality was observed. Within the campground some of the

understory hemlocks were heavily defoliated. Overstory hemlocks exhibited some defoliation, but no mortality of these larger trees was observed. There appears to be very little hemlock mortality in the campground now, but there may be additional mortality of understory trees in 1994. My estimate is that very few of the overstory trees will die as a direct result of WHL-caused defoliation unless defoliation of these overstory trees is very heavy in 1994.

September 23

Barbara, Sue and I met at the Mt. Baker Ranger Station and drove to an area along Bacon Creek which had been designated as heavy WHL-caused defoliation on the aerial survey maps. There were many moths flying in this area. Pockets of trees were quite heavily defoliated. Mortality of understory hemlocks was common within these pockets. Overstory hemlocks had substantial amounts of defoliation, but did not see any that appeared to be dead. Some of these trees may die next year, especially if they experience more defoliation in 1994.

We drove to Baker Lake Lodge, which is on the west shore of Baker Lake. From there I could see pockets of heavy WHL defoliation on the east side of the lake. These are areas which exhibited defoliation last year. It appears that there is some tree mortality has occurred in these pockets.

Some areas on the Darrington and Mt. Baker Ranger Districts have had significant amounts of defoliation for two years. Past records from the Pacific Northwest indicate that in outbreak populations of WHL have declined to low levels during the third year of the outbreak. In central British Columbia, WHL populations which have caused defoliation for the past two or three years either collapsed this year or are expected to collapse next year. Therefore, even though the extent and intensity of WHL-caused defoliation expected in 1994 on the Darrington and Mt. Baker Ranger Districts cannot be predicted with high confidence, there is a reasonable probability that these populations will decline next year after causing some defoliation. It is not expected that total area showing defoliation will expand significantly in 1994.

The extent and intensity of WHL-caused defoliation that can be expected next year on the Darrington and Mt. Baker Ranger Districts cannot be predicted with much reliability. Because some of the areas have apparently had significant amounts of defoliation for two years, and because past records indicate that in the west outbreak populations of WHL have declined to low levels during the third year of the outbreak, there is a reasonable probability that these populations will decline next year after causing some defoliation. In addition, WHL populations in central British Columbia which have caused defoliation for two or three years either collapsed this year or are expected to collapse next year. It is not expected that total area showing defoliation will expand significantly in 1994.

Douglas-fir Beetle

We then visited a small campground adjacent to Baker Lake Lodge to look at an area which had experienced blowdown in winter of 1990-1991. The down Douglas-fir had been infested with Douglas-fir beetle (DFB) in spring 1991, and the adults from these logs had infested approximately a dozen nearby standing Douglas-fir in spring of 1992, four of which are in the actual campground, and

the remainder across the road. In a quick survey of the area, I could only find one standing tree that had been attacked in 1993.

We also went into the Park Creek Campground which also had evidence of 1992 DFB attacks on standing Douglas-firs. Some of these trees had been felled and left lying in the campground. I observed several other trees which had been infested in 1992 but had not been felled. I only found one newly attacked (Spring 1993) standing Douglas-fir during the brief walk-through of a portion of the campground.

It appears that the Douglas-fir beetle populations are diminishing as is common two or three years after a population increase in blowdown west of the Cascade Crest. There may be another tree or two attacked in 1994. However, I expect any newly attacked trees to be widely scattered and do not see a significant threat to the integrity of the campground.

If you need additional information, contact me by telephone at 503-326-6218 or by DG at R06C.

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